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Work Plan Implementation Plan for Present Landfill (Operable Unit No. 7)

May 16, 1994

Prepared for

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ADMIN RECCRD



BZ-A-000451

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1. INTRODUCTION

This Work Plan Implementation Plan (WPIP) outlines the staffing, procedures, equipment, and schedule for implementation of the Revised Work Plan Technical Memorandum for Operable Unit No 7 (OU 7) at the Rocky Flats site. The purpose of this document is to explain to EG&G's Subcontract Administrator (SA) and Contractor Technical Representative (CTR) how The S M Stoller Corporation (Stoller) and its subcontractors will implement field activities described within the referenced work plan. As required by the statement of work (SOW) for the project, the plan addresses

- Procedures to implement the work plan by task,
- Equipment requirements,
- Project schedule for field activities including mobilization and demobilization,
- Required field support, and
- Training requirements

In addition, Stoller has included a section on project staffing and field personnel responsibilities.

Operable Unit No 7 consists of the Present Landfill (Individual Hazardous Substance Site [IHSS] 114), the Inactive Hazardous Waste Storage Area (IHSS 203), the East Landfill Pond, and spray evaporation areas adjacent to the East Landfill Pond. The segment of No Name Gulch located immediately east of the East Landfill Pond will also be included in the Phase II field investigation.

The purpose of the OU 7 investigation is to perform a Phase II Resource Conservation and Recovery Act (RCRA) facility investigation/remedial investigation (RFI/RI) as defined by section I B II b of attachment 2 of the Rocky Flats Interagency Agreement (IAG) (DOE 1991a). General objectives of the Phase II RFI/RI are to better define the nature and extent of contamination, provide data for a risk assessment that addresses integration of the Phase I and Phase II pathways, and provide data to support the development of interim measure/interim remedial action (IM/IRA) decision documents. The scope of this project is the result of current negotiations between U S Department of Energy (DOE), Colorado Department of Health (CDH), and U S Environmental Protection Agency (EPA) and includes recent direction by DOE to perform a separate IM/IRA decision documents for the collection of landfill leachate and for landfill closure.

Specific objectives of the revised work plan technical memorandum are as follows

- Confirm contamination in surface soils at locations around the East Landfill Pond where analyte concentrations exceed the upper tolerance limit (UTL_{99/99}) for which there is 99-percent confidence that the UTL is equal to or greater than the true 99th percentile of the background population
- Characterize the spatial extent of contamination in surface soils at locations around the East Landfill Pond where analyte concentrations exceed draft potential remedial action goals (PRGs)
- Further delineate the contaminant plume in upper hydrostratigraphic unit (UHSU) groundwater on the southeast side of the East Landfill Pond
- Further delineate the contaminate plume in UHSU groundwater on the north side of the East Landfill Pond downgradient of IHSS 167 1
- Further delineate the extent of groundwater contamination in the UHSU along No Name Gulch
- Determine the presence or absence of contamination in lower hydrostratigraphic unit (LHSU) groundwater in No Name Gulch
- Design a monitoring network that will meet requirements for post-closure care of the Present Landfill
- Characterize the interim soil cover material

Data collected during the Phase II investigation will be used to determine the contaminants in surface soil that present a risk to human health and the environment and the appropriate response action required to reduce those risks, describe the impacts to groundwater resulting from contaminant releases from the landfill and determine whether or not these impacts require a response action, support closure of the Present Landfill under the Colorado Hazardous Waste Act (CHWA) and RCRA, design the landfill cap, leachate control system, leachate collection and treatment system, and gas collection and treatment system, and meet the IAG milestone of July 1997 for IM/IRA implementation

Implementation of the revised work plan technical memorandum for OU 7 (DOE 1994) will comply with regulatory guidance documents and comments received from DOE, CDH, and EPA provided in writing by the CTR

Section 2 0 of this plan presents the project team organization. Personnel responsible for project management and task management are discussed briefly. Staffing of the field investigation and responsibilities of field team members are described in detail.

Section 3 0 outlines the procedures for implementing the work plan. Health and safety requirements and training requirements are presented first, followed by a general discussion of the approach for implementing the sampling and analysis plan. Specific field procedures are listed. Clarifications to the sampling and analysis plan, requirements for field documentation, and coordination with other activities are discussed. A general discussion of the approach for conducting data evaluation activities, preparing the baseline risk assessment and the IM/IRA decision document, and developing the final Title II design is also included.

Section 4 0 discusses the equipment used during implementation. A list of equipment provided by EG&G is presented first, followed by a list detailing equipment for this project that will be provided by Stoller and its subcontractors.

Section 5 0 describes the project schedule. Field activities are discussed first, including a section on the required sequencing of activities. General schedules for data evaluation activities, baseline risk assessment and IM/IRA decision document preparation, and Title II design development are also presented.

2. PROJECT TEAM ORGANIZATION AND PERSONNEL RESPONSIBILITIES

The OU 7 project team is organized into three parts project management, task management, and the field team Personnel assigned to each position of the project team and their corresponding responsibilities are detailed below

2.1 Project Management

The project management staff consists of the personnel necessary to control the day-to-day administrative and contractual operations of the OU 7 project Figure 2-1 shows the project management organization to the task manager level Duties and responsibilities of the project management staff are outlined below

Program Manager — Allen Crockett

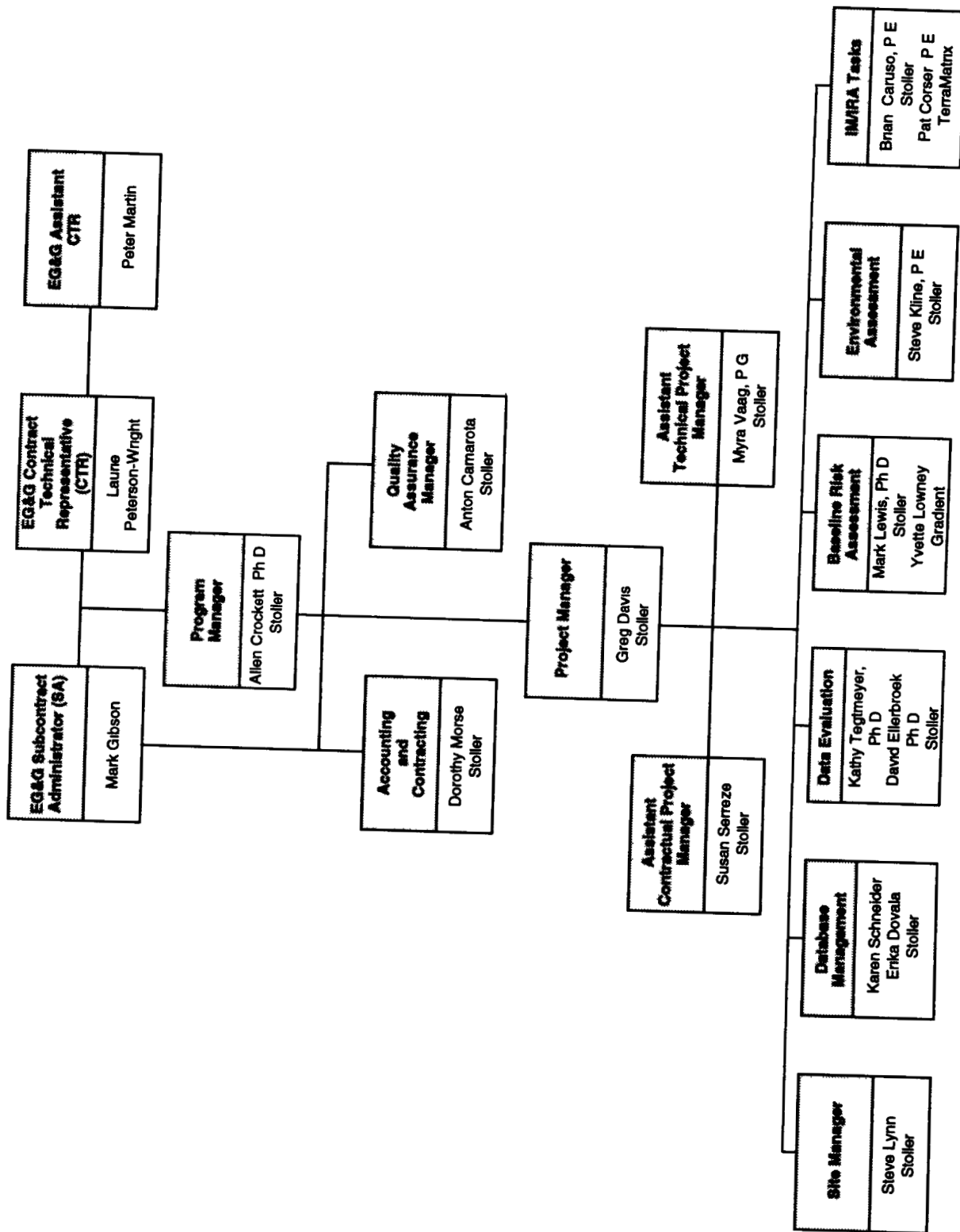
The program manager ensures that Stoller completes the proposed scope of work according to EG&G/DOE and contract requirements, including quality of work and compliance with budget and schedule requirements This individual provides strategic direction during the project, oversees work and deliverables, and ensures that the Stoller peer review and quality assurance (QA)/quality control (QC) functions are conducted The program manager also maintains communications with EG&G's project sponsor to ensure that the objectives of the project, as specified by the terms of the contract, are met to EG&G's satisfaction

Project Manager — Greg Davis

The project manager completes the proposed scope of work according to EG&G/DOE and contract requirements This includes overseeing project task managers, quality assurance officer, work quality, and compliance with budget and schedule requirements Additional specific responsibilities include

- Technical direction and control of Stoller staff in accordance with contract requirements,
- Communications with EG&G concerning management issues, including contract negotiation, contract requirements, and contract modifications (if required),

**Figure 2-1 OU 7 RFI/RI and IMIRA Project Team Organization
Fiscal Year 1994 – Fiscal Year 1996**



- Communications with EG&G and Stoller concerning technical issues,
- Classification review,
- Document control and preparation of administrative deliverables,
- Communication with EG&G concerning work progress and findings, cost, and schedule issues,
- Cost control, and
- Incorporation of QA activities

Stoller technical and administrative staff support the project manager as necessary

Quality Assurance Manager — Anton Camarota

The project QA manager serves as a consultant to the program manager and oversees and evaluates QA activities for this project

Accounting and Contracting — Dorothy Morse

Contract personnel act as liaison to the subcontractors and to EG&G Procurement. The accounting staff prepares monthly invoices, supporting documentation, and accounts payable.

Assistant Contractual Project Manager — Susan Serreze

The assistant contractual project manager oversees the preparation of monthly invoices and supporting documentation as well as accounts payable and works with contracting personnel to administer contracts with subcontractors and with EG&G. The assistant contractual project manager will also provide monthly cost/schedule progress reports that briefly summarize progress for the reporting period and identify planned work for the next reporting period. As required by the SOW, monthly update reports that summarize significant issues or problems that arise during the reporting period and suggest solutions will be prepared.

Assistant Technical Project Manager — Myra Vaag

The assistant technical project manager is the liaison between the project manager and the field team and oversees technical implementation of the sampling and analysis plan. The assistant technical project manager will also coordinate the preparation of reports for the baseline risk assessment and the IM/IRA.

2.2 Task Management

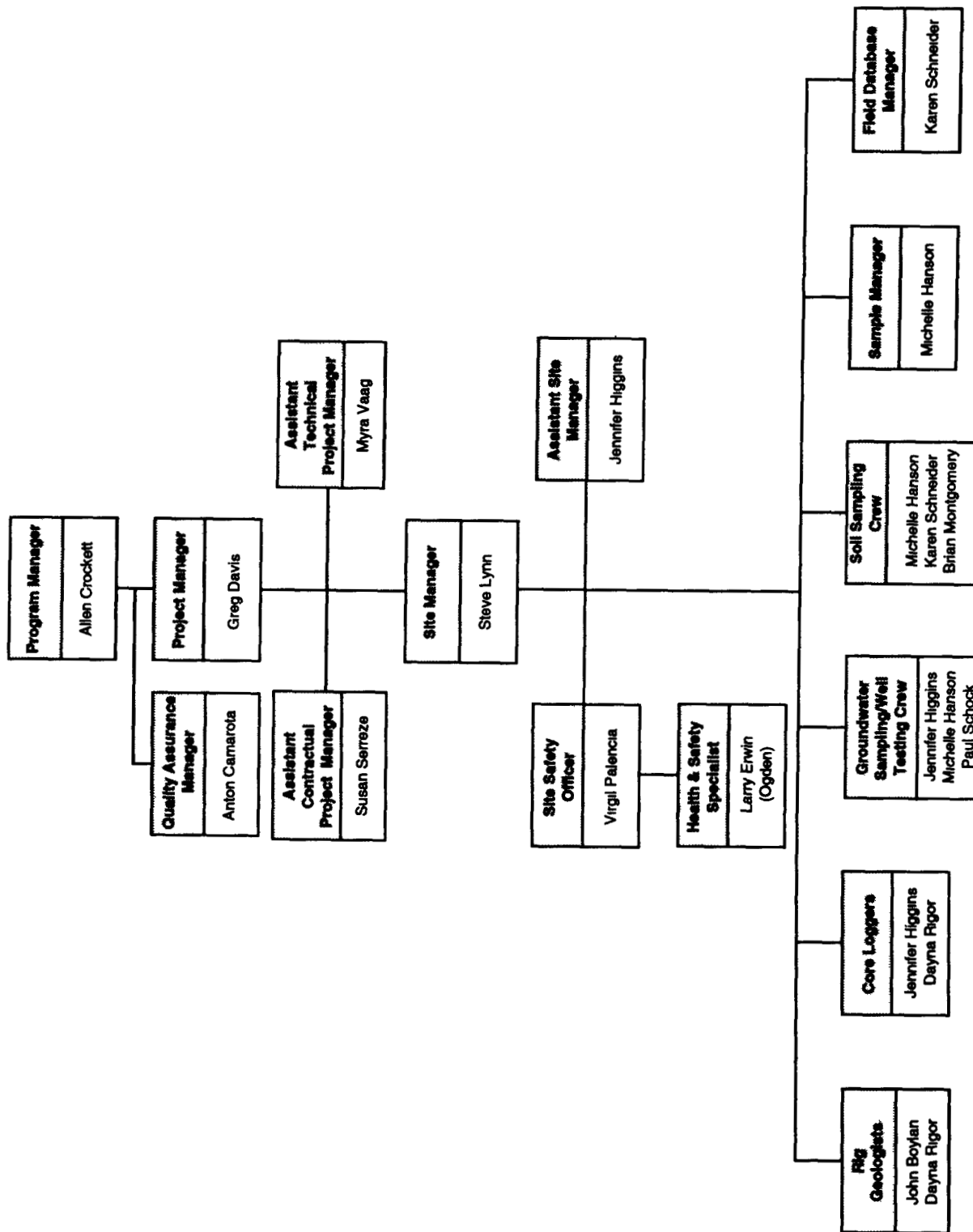
Figure 2-1 shows the task managers for database management, data evaluation, baseline risk assessment, environmental assessment, and the IM/IRA tasks. Karen Schneider and Erika Dovala will organize and manage the database and perform programming and other computer support. Drs. Kathy Tegtmeyer and David Ellerbroek will be responsible for data evaluation. Dr. Mark Lewis of Stoller will lead the risk assessment activities including preparation of technical memoranda to support the human health risk assessment. Stoller will perform the ecological evaluation. Yvette Lowney of Gradient will provide peer review and technical support for the risk assessment. Steve Kline, P.E., will be responsible for the environmental assessment. Brian Caruso, P.E., of Stoller and Pat Corser, P.E., of TerraMatrix will be responsible for the IM/IRA tasks which include an options analysis, conceptual design, a decision document, and ultimately a final Title II design.

2.3 Field Team

The proposed Stoller field team organization is presented in Figure 2-2. The team comprises of the following functional positions and individuals:

- Project Manager — Greg Davis
- Assistant Technical Project Manager — Myra Vaag
- Site Manager — Steve Lynn
- Assistant Site Manager — Jennifer Higgins
- Site Safety Officer (SSO) — Virgil Palencia
- Health and Safety Specialist (HSS) — Larry Erwin (Ogden)

**Figure 2-2 OU 7 Field Team Organization
July 1994 -- November 1994**



- Rig Geologists — John Boylan, Dayna Rigor
- Core Loggers — Dayna Rigor, Jennifer Higgins
- Sample Manager — Michelle Hanson
- Field Database Manager — Karen Schneider
- Soil Sampling Crew — Michelle Hanson, Karen Schneider, Brian Montgomery
- Well Testing and Groundwater Sampling Crew — Jennifer Higgins, Michelle Hanson, Paul Schock
- Drilling Subcontractor — Driller, driller's helper, and support laborer (Christensen Boyles Corporation)
- Surveying Subcontractor — Merrick and Company

Depending on other Stoller staffing requirements, some substitutions with equally qualified personnel could be made. The responsibilities and duties of the key functional positions are described below.

Site Manager

The site manager has the primary and ultimate responsibility for all field team activities. The site manager will

- Brief the rig geologists and/or other field crew leaders daily prior to fieldwork,
- Meet with the SSO daily and ensure that safety and equipment requirements are met,
- Generate weekly progress reports, including information regarding number of boreholes or wells completed, number of soil samples collected, results of field screening of samples, problems encountered, and solutions,
- Interact with the EG&G project manager daily,
- Interact with the Stoller project manager daily,
- Coordinate appropriate agencies and subcontractors,

- Check project data sheets prior to submittal to the Stoller project manager,
- Initiate document modification requests when it is necessary to deviate from the project control documents,
- Post applicable document modification requests, and inform personnel of pertinent changes,
- Maintain a daily log of all personnel and visitors who enter and exit field areas,
- Maintain a log of daily activities, including logs of telephone conversations, and
- Ensure punctual and correct completion of daily paperwork (standard operating procedure [SOP] forms) by all field personnel

Assistant Site Manager

The assistant site manager will

- Meet with and assist site manager on a daily basis, and perform site supervisor duties in his or her absence,
- Maintain equipment,
- Inventory and order supplies,
- Complete purchase requisitions, and maintain procurement files,
- Interact with Stoller office procurement personnel,
- Inspect procured equipment, and maintain invoice files for equipment received,
- Assist with other direct cost (ODC) tracking,
- Maintain project field files,
- Maintain a log of field books, and perform QC checks of field books,
- Perform QC checks of completed SOP forms,
- Ensure completion of all phases of the QA/QC program, and

- Interact with the data manager on a daily basis to ensure proper completion of data entry activities and QA/QC

Site Safety Officer

The SSO is responsible for the overall safety of the field team. The SSO will perform the following duties and responsibilities:

- Maintain files documenting personnel training qualifications including
 - Respirator fit tests,
 - Medical monitoring documentation,
 - Radiological training documentation, and
 - OSHA training documentation
- Conduct site-specific health and safety briefing for all field personnel and for site visitors
- Ensure that all field personnel and all site visitors have read and understand the project health and safety plan
- Monitor each member of the field team for compliance with the project-specific health and safety plan and for other health and safety needs, and document this information
- Maintain files of material safety data sheets (MSDSs)
- Conduct daily health and safety briefing for all field personnel to discuss work status and any health and safety issues (such as weather, level of protection, etc.)
- Initiate appropriate revisions to the health and safety plan in response to changing conditions at OU 7
- Oversee and coordinate activities with the health and safety specialist
- Check specifications, coordinate maintenance, and ensure daily/regular calibration of health and safety equipment
- Confirm calibrations of monitoring equipment and log results

- In the absence of the health and safety specialist, fill out appropriate SOP forms, including
 - Field Monitoring Results of Cuttings or Core (Form FO 8A),
 - Verification of Organic Vapor Monitoring Results (Form FO 8B),
 - Record of Drilling Fluids and Cuttings (Form FO 8C),
 - Calibration Record (Form FO 15A),
 - Results of Radiological Measurements in the Field (Forms FO 16A, FO 16B),
 - Contamination Survey Forms (Form EMRG 1 1A, 1 1B, 3 1A, 6 6A, as appropriate),
 - Daily Source Check Log (Form OPS 6 1A, 6 1B, 6 1C, as appropriate), and
 - Performance Test Log Sheet (Form OPS 6 3A, 6 3B, 6 3C, 6 4A, 6 4B, as appropriate)
- Monitor field conditions (such as temperature, wind, and lightning)
- Set up an exclusion zone with cones (high-visibility, 30-foot radius from borehole)
- Monitor samples, equipment, and personnel for organics according to the applicable SOPs
- Observe/monitor the crew for health and safety needs (such as health and safety infractions and heat stress)
- Implement emergency procedures as required
- Authorize the suspension of field activities if the health and safety of personnel are endangered
- Maintain a daily log of onsite health and safety information, including a daily health and safety checklist, and document health and safety information, including instrument readings, significant events, and observations
- Authorize the temporary suspension of an individual from field activities for infractions of the health and safety plan
- Initiate the appropriate paperwork for health and safety incidents and infractions

Health and Safety Specialist

The health and safety specialist will

- Perform SSO's duties in his or her absence,
- Calibrate, source check, and maintain all radiation instrumentation, and complete appropriate SOP forms, including
 - Calibration Record (Form FO1 15A),
 - Contamination Survey Forms (Form EMRG 1 1A, 1 1B, 3 1A, 6 6A, as appropriate),
 - Daily Source Check Log (Form EMRG 6 1A, 6 1B, 6 1C, as appropriate), and
 - Performance Test Log Sheet (Form EMRG 6 3A, 6 3B, 6 3C, 6 4A, 6 4B, as appropriate),
- Obtain radiological work permits and post radiation signage as necessary,
- Complete appropriate SOP forms, including
 - Field Monitoring Results of Cuttings or Core (Form FO 8A),
 - Verification of Organic Vapor Monitoring Results (Form FO 8B),
 - Record of Drilling Fluids and Cuttings (Form FO 8C), and
 - Results of Radiological Measurements in the Field (Forms FO 16A, FO 16B),
- Implement and enforce the Environmental Management Radiological Guidelines (EMRGs),
- Monitor samples, equipment, and personnel for radionuclides according to the applicable SOPs and EMRGs,
- Verify all radiation readings that are greater than 250 counts per minute (cpm) on equipment or personnel using the verification procedures described in FO 08 (Section 6 3 1),
- Perform daily, weekly, and monthly radiation surveys of equipment and work areas as needed,
- Screen project equipment after exiting the main decontamination facility (MDF),
- Perform equipment release surveys,

- Document all radiation surveys,
- Scale and count all radiological smears collected in the field, and
- Conduct daily QA checks of all field radiation monitoring documentation

Sample Manager

The sample manager will

- Meet with the site manager daily to obtain sampling requirements, including QA/QC requirements,
- Complete appropriate SOP forms, including the Residual Lab Soil Characterization Form (Form FO 9A),
- Complete the chain-of-custody (COC) forms,
- Decontaminate sample coolers,
- Prepare decontaminated sample coolers with the appropriate sample liners, sample containers, and blue ice prior to daily field activities,
- Meet and coordinate daily activities with the data manager,
- Assist the data manager in maintaining a sample tracking database,
- Maintain a daily log of sample-management activities,
- Record dates, times, and pertinent data of important telephone conversations with laboratories or EG&G personnel about sample information,
- Ensure that samples shipped offsite meet Department of Transportation (DOT) requirements,
- Secure and preserve collected samples until shipment,
- Check sample labels to make sure they contain the proper information and that they are consistent with the corresponding COC,
- Properly package sample jars and containers that will be shipped to the laboratory,

- Properly label the sample coolers according to environmental sampling requirements prior to lab shipment,
- Deliver sample coolers to the courier,
- Interact with the laboratory, including
 - Notifying the lab of samples being shipped,
 - Verifying arrival of samples and that holding times are met, and
 - Conducting sample tracking,
- Inventory sampling equipment and supplies (including sample containers, labels, blue ice, coolers, etc), and order as necessary through the assistant site manager, and
- Provide weekly synopsis to site supervisor of samples shipped during the previous week and projected number of samples to be shipped during the upcoming week

Database Manager

The database manager will

- Fill out or enter data from appropriate SOP forms, including Rocky Flats Environmental Database System (RFEDS) Field Data Transmittal Form (Form FO 14A),
- Enter field data and sample-tracking information from field forms into Datacap,
- Ensure that QC of the RFEDS information entered is conducted,
- Print hard copies of Datacap file,
- Backup information on diskette and tape daily,
- Download Datacap files, and transmit to EG&G weekly,
- Enter boring logs into Geobase borehole program,
- Ensure that QC of the Geobase information entered is conducted,
- Print hard copies of Geobase,
- Download Geobase files to EG&G,

- Provide daily tracking of waste generated during field operations, and
- Download waste tracking information

Rig Geologist

The rig geologist is responsible for the overall operation of the field team for drilling operations. The rig geologist will

- Meet with the site manager daily to discuss activities,
- Meet with the driller daily for briefing on the proposed work load,
- Meet with the sample manager daily to obtain information on the sampling and QA/QC requirements,
- Ensure that the driller and helper load appropriate equipment such as drums, decontaminated and appropriately sized downhole equipment, and decontaminated and appropriately sized well materials (such as pipe, filter pack, bentonite pellets, grout, sand bailer, surface casing),
- Confirm that all downhole equipment has been properly decontaminated prior to drilling,
- Document pertinent information, including site visitors, significant events, observations, and measurements during field investigations,
- Ensure that all drilling activities are conducted according to the applicable SOPs and work plan,
- Verify that wells are installed according to the applicable SOPs and work plan,
- Verify that a well (if installed) is properly labeled and locked with an EG&G-provided lock prior to leaving the well site,
- Relinquish samples to the sample manager at the end of the day,

- Complete appropriate SOP forms, including
 - Preliminary Well-Site Field Log (Form GT 1B),
 - Daily Field Drilling Activities Report (Form GT 2A),
 - Well/Borehole Abandonment Form (Form GT 5A),
 - Groundwater Monitoring Well and Piezometer Report (Form GT 6A),
 - Equipment Decontamination/Wash Checklist and Record (Form FO 3A),
 - Heavy Equipment Decontamination/Wash Checklist and Record (Form FO 4A),
 - Drum Field Log Form (Form FO 10A),
 - Drum Inspection Form (Form FO 10B),
 - Soil and Sediment IDM Form (Form FO 23A), and
 - RCRA Final Drum Disposition Form (Form FO 23B),
- Assign personnel to drum receiving, handling, and labeling,
- Coordinate with EG&G concerning transfer and storage of drums and maintaining waste documents, and
- Maintain a drum tracking database

Core Logger

The core logger will

- Log soil and bedrock core in accordance with SOP GT 1, Logging Alluvial and Bedrock Material,
- Complete appropriate SOP forms, including the Borehole Log (Form GT 1A),
- Interact with the stratigrapher from EG&G Geosciences,
- Maintain a file on borehole logs and monitoring well completion forms,
- Follow RFP requirements regarding photographing core, and
- Maintain the storage area for core

Soil Sampling Leader

The lead soil sampler will

- Meet with the site supervisor daily to discuss sampling activities,
- Ensure that sampling activities are completed in accordance with the applicable SOPs and work plan,
- Oversee and assist the sampling technicians,
- Complete the appropriate SOP forms (see Table 3-3), and
- Perform sample manager's duties in his or her absence

Groundwater Sampling and Well Testing Leader

The lead sampler will

- Meet with the site supervisor daily to discuss sampling and testing activities,
- Ensure that sampling activities are completed in accordance with the applicable SOPs and work plan,
- Oversee and assist the sampling technicians,
- Complete the appropriate SOP forms (see Section 3), and
- Perform sample manager's duties in his or her absence

2.4 Quality Assurance and Quality Control

Stoller's performance of work activities for the OU 7 Phase II RFI/RI will comply with established corporate QA policies, which ensure that project work activities incorporate applicable QA requirements detailed in the EG&G Environmental Management (EM) Quality Assurance Project Plan (QAPjP) (EG&G 1991a), the Quality Assurance Addendum (QAA) presented in the OU 7 RFI/RI Work Plan (DOE 1991b), EPA QAMS-005/80, and DOE Order 5700 6C

Stoller will respond to Corrective Action Requests (CARs) in accordance with Section 16 0 of the QAPjP. Nonconforming items and samples will be identified, segregated, dispositioned, and approved per Section 15 0 of the QAPjP and applicable SOPs. Procured items will be reviewed to determine conformance with purchase specifications as required in Section 7 0 of the QAPjP. Measuring and test equipment data files will be maintained in the field office. Other specific quality assurance requirements listed in the statement of work such as project organization, personnel qualifications, document control, instructions, procedures, and drawings, identification and control of items, handling, storage and shipping, and inspection have been addressed in separate sections of this plan or in the SOPs.

3. PROCEDURES

Procedures for implementing the work plan include a staged approach, SOPs, clarifications to the sampling and analysis plan, field documentation, and coordination with other activities. Health and safety requirements and training requirements are also provided.

3.1 Health and Safety/Training Requirements

All field personnel (Stoller and its subcontractors) must meet the health and safety requirements described in the OU 7 site-specific health and safety plan (Walsh 1992) and the addendum (EG&G 1994). Those requirements include the Occupational Safety and Health Administration (OSHA) hazardous waste site health and safety 40-hour course and annual 8-hour refresher course, OSHA supervisor training, respirator indoctrination and quantitative respirator fit test, hazard communication, RCRA training, DOT training, hazardous waste operations on-the-job training, and an initial site-specific health and safety briefing. Health and safety specialists performing radiation monitoring of field equipment and personnel will be EG&G-approved and shall have the training required by EG&G Radiological Engineering. The site safety officer ensures that training for Stoller and subcontractor personnel is current. Table 3-1 shows the current status of health and safety training for all OU 7 field personnel.

Additional training courses required by EG&G include general employee training (GET), SOP-specific training classes, and three days of field experience incorporating on-the-job training. The project stratigrapher(s) must complete an 8-hour core-logging class conducted by EG&G. The sample manager will complete DOT training. Decontamination laborers using the main decontamination facility and field personnel handling drummed wastes will also require SOP-specific training from EG&G personnel. Table 3-2 shows the current status of Rocky Flats/EG&G-required training for all OU 7 field personnel.

Table 3.1
Health and Safety Training Records

NAME	40 HOUR OSHA	8 HOUR OSHA	HAZARDOUS WASTE COMMUNICATIONS	OSHA SUPERVISOR	GET	RADIATION WORKER II	HAZARDOUS WASTE OTJ TRAINING	DOT TRAINING	RESPIRATOR FIT	SITE SPECIFIC SAFETY	RCRA TRAINING LIST	RCRA OVERVIEW	WASTE GENERATOR ON THE JOB TRAINING	WASTE GENERATOR QUALIFICATION	WASTE STREAM RECYCLE D & CHUR	DRUM TRAINING	DECON PAD TRAINING	COMPUTER SECURITY	LOGGER TRAINING	LOGIST TRAINING	DATA CAP TRAINING
ALDRIDGE STEVE	✓		✓		✓	✓	✓	✓	✓		✓	SITE									
BELL RICK	✓		✓		✓	✓	SITE		✓		✓	SITE									
BOYLAN JOHN	✓	✓	✓	✓	✓	X	SITE		X	SITE	SITE	SITE									
BURCAR SCOTT	✓				✓	X			X												
CAMAROTA ANTON	✓	✓			✓																
CARLINO BRIAN	✓			✓	✓				✓												
CROCKETT ALLEN	✓	✓			✓	✓															
CRUTE KELLEY	✓	✓			✓	✓															
DANNY MARY	✓				✓																
DAVIS GREG	✓	✓		✓	✓		SITE			SITE	SITE	SITE									
DAVID WHITE AMIE	✓	✓			X																
DOVALA EMMA	✓				✓	✓															
ELLERBROCK DAVE	✓	✓	✓		✓	✓	SITE		✓	SITE	✓	SITE									
ERWIN LARRY	✓	✓	✓		✓	X	SITE		X	SITE	✓	SITE									
GEORGE DAN	✓	✓	✓		✓	✓	SITE		✓	SITE	X	SITE								✓	✓
HANSON MICHELLE	✓	✓	✓		✓	✓		✓											✓		✓
HAYDEN SCOTT CONNIE	✓				✓		SITE	✓	X	SITE	SITE	SITE	✓	✓	✓	X					
HIGGINS JENNIFER	✓	✓	✓	✓	✓															✓	✓
KLINE STEVE	✓	✓			✓																
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LYNN STEVE	✓	✓	✓	✓	✓	✓	SITE		✓	SITE	✓	SITE	✓	✓	✓	X		X		✓	✓
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MONTGOMERY BRIAN	✓	✓	✓		✓	✓															
ORNEA-STONE MAUREN	✓	✓	✓		✓	✓															
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PALMER DAVE	✓	✓	✓		✓																
PLANK MARTHA	✓	✓			✓	✓															
REEDER DAN	✓	✓	X		✓	✓	SITE		X	SITE	✓	SITE									
RIGOR DAYNA	✓	✓	X		✓	✓	SITE		X	SITE	✓	SITE								✓	✓
ROEDER LAREN	✓	✓			✓	✓													✓		✓
SCROCK PAUL	✓	✓	✓		✓	✓	SITE	✓	✓	SITE	✓	SITE									
SENNEZ BRIAN	✓	✓			✓																
SHAPIRO BERTYL	✓	✓			✓																
TESTMEYER KATHY	✓	✓			✓																
TULLER MARK	✓	✓			✓																
VAAS MYRA	✓	✓			✓								X	X	X	X	X				
WILLER 1 2 3 & 4	✓	✓	X		✓	X	SITE		X	SITE	X	SITE	X	X		X					
SURVEYOR 1 & 2	✓	✓	✓		✓	X	SITE			SITE	✓	SITE									

X Required and not completed
✓ Required and completed
Not required
SITE Onsite training required

Table 3-2
Rocky Flats Site Access and Training Requirements

Training	Drivers	Information
OSHA 40-hour 3 or 1 day onsite Hazardous Waste Operations On-The-Job Training	29 CFR 1910 120 Health & Safety Practices Manual (HSP) 21 03-5 5 1 1 and 5 5 1 2 Training User's Manual (TUM)	40-Hour OSHA and three days of field experience are required for OU workers and their supervisors who are (a) exposed or potentially exposed to hazardous substances, (b) required to enter an exclusion zone or contamination reduction zone where level A, B, C, personal protective equipment (PPE) is required, (c) entering areas where remedial actions or investigations have begun
Department of Transportation Training	49 CFR 172 704	Required for a person employed by a hazardous materials employer who, in the course of employment, directly affects hazardous materials transportation
Radiation Worker Level I or II (depending on job responsibilities) OR Test-Out	DOE Order 5480 11 HSP 5 01 DOE Radiological Control Manual (effective Jan 1, 1994)	Radiation Worker Level II is required for personnel performing or supervising work that disturbs soil and for entry into soil contamination areas
Respirator Indoctrination (CBT/Fit) Test	HSP 7 03	Required prior to attending Radiation Worker Level II May be completed at another facility — must be approved by EG&G personnel
8-Hour OSHA refresher (if OSHA training is NOT current)	29 CFR 1910 120 Training User's Manual HSP 21 03-5 5 1 4 4 HSP 21 03-3 14 (Definition of Hazardous Waste Areas)	The 8-hour refresher is required annually for all personnel (including subcontractors) who received 40- or 24-hour OSHA and still meet those course training requirements
OSHA Supervisor	29 CFR 1910 120 Training User's Manual HSP 21 03-5 5 1 4 5 HSP 21 03-3 14 (Definition of Hazardous Waste Areas)	The 8-hour supervisor course is required for all supervisors of employees required to attend 40- or 24-hour OSHA because of their work in an OU
Site-Specific Safety Briefing	29 CFR 1910 120 HSP 21 03-5 5 1 4 4	This briefing is required for all personnel, prior to initial visit, when working or visiting an OU This training is the only training required if the visitor (less than 2 weeks) is escorted by a fully trained individual
GET Subcontractor (Fire Protection training is included in this course)	DOE Order 5480 20 TUM	Visitors, subcontractors, and temporary personnel who require unescorted access to the site for more than 2 weeks
RFP Visitor Information Reading	DOE Order 5480 20 Reading available at the Badging Office	Visitors, subcontractors, and temporary personnel who require unescorted access to the site for more than 2 weeks
Hazard Communication (CBT ¹)	OSHA 29 CFR 1910 66, 106, 110, 111, and 1200, DOE Order 5480 10, HSP 9 07	Personnel whose work assignment may expose them to hazardous chemicals
RCRA Hazardous Waste Training Checklist (RF Form 47174)	Colorado Hazardous Waste Regulations sec 264 16, RCRA Permit Application rev 1, sec H 1-10000-HWR, Haz Waste Reg Manual, sec 2	See below

Training	Drivers	Information
RCRA Training (CBT ¹)	Colorado Hazardous Waste Regulations sec 264 16, RCRA Permit Application rev 1, sec H, 1-10000-HWR, Haz Waste Req Manual, sec 2	Short or long version depending on checklist Checklist must be completed by a RCRA Custodian
QA Overview briefing	ERM QA Project Plan	Taught inhouse by an EQS Training
Required reading	ERM QAPJP	As assigned by project manager
Computer security for users	DOE Order 5637 1	Required for anyone using a DOE-owned computer
Waste generator qualification	NVO-325, WP-1027, HWRM, 40 CFR	Required if generating and packaging waste, radioactive or nonradioactive

¹ CBT = Computer Based Training

Stoller will conduct an SOP training program and project QA orientation for all Stoller and subcontractor field personnel. All field personnel assigned to OU 7 must be familiar with those portions of the SOPs relevant to their field duties and responsibilities. Stoller will maintain signature verification that field personnel have read, understood, and will comply with Rocky Flats SOPs. Copies of training records will be provided to the EG&G Training Coordinator and the EG&G Training Center and will also be filed in the field trailer at the Rocky Flats site.

3.2 Implementation of the OU 7 Sampling and Analysis Plan

This section describes the Phase II investigation rationale for OU 7 and No Name Gulch. The rationale for the Phase II sampling activities is based on an iterative process involving the use of data obtained during the Phase I investigation to direct subsequent field activities. A staged approach, as outlined in the IAG (DOE 1991a), will be used for the field investigation. The investigation tasks consist of the following four stages:

Stage 1 involves mobilization and field screening activities. A visual inspection will be performed to assess site conditions, including ongoing waste operations, that may affect field activities or the quality of data collected. Locations for borehole drilling and soil sampling will be identified and marked. Locations of surface soil samples in IHSS 114 and around the East Landfill Pond will be surveyed using coordinates from Phase I to ensure that the verification samples are collected from the same location as the original samples. A radiation survey is required prior to the initiation of field activities to determine the presence or absence of radiological contamination at all drilling and sampling locations.

Stage 2 consists of Phase II field-investigation activities associated with surface soil sampling, drilling, and sampling of the interim soil cover material for landfill cap design. The proposed soil sample locations are presented in the sampling and analysis plan (DOE 1994). All locations are adjacent to the East Landfill Pond. Samples will be collected to verify analyte concentrations in excess of the UTL_{99/99} and to determine the spatial distribution of contamination at locations where analyte concentrations exceeded draft PRGs.

The existing interim soil cover material in IHSS 114 will be sampled under Stage 2. Proposed soil sample locations are presented in the sampling and analysis plan (DOE 1994). Samples will be collected to determine the physical properties important for landfill cap design.

Stage 3 involves borehole drilling, well installation, groundwater sampling, and well testing. Boreholes will be drilled and drill core will be collected for geologic characterization. This stage also involves development and sampling of monitoring wells. The locations of the proposed monitoring wells are presented in the sampling and analysis plan (DOE 1994). Groundwater monitoring wells will be installed to meet two distinct objectives: (1) to delineate contaminant plumes in UHSU groundwater and (2) to determine the presence or absence of groundwater contamination in the LHSU. All wells will be sampled after completion and development. The first samples will be collected at least 48 hours following well development. Drawdown recovery tests will be performed after wells have been sampled.

Stage 4 will include the final location survey of boreholes and monitoring wells and a survey of soil sample locations if the original locations were moved. Demobilization will occur immediately following well testing.

3.2.1 *Standard Operating Procedures*

The following Rocky Flats program-wide SOPs will be used during the specific field investigations for OU 7 (Manual No. 5-21000-OPS) (EG&G 1992):

- Volume 1 Field Operations
 - FO 1 Air Monitoring and Dust Control
 - FO 3 General Equipment Decontamination
 - FO 4 Heavy Equipment Decontamination

- FO 5 Handling of Purge and Development Water
- FO 6 Handling of Personal Protective Equipment
- FO 7 Handling of Decontamination Water and Wash Water
- FO 8 Handling of Drilling Fluids and Cuttings
- FO 9 Handling of Residual Samples
- FO 10 Receiving, Labeling, and Handling Environmental Materials Containers
- FO 11 Field Communications
- FO 12 Decontamination Facility Operations
- FO 13 Containerization, Preserving, Handling and Shipping of Soil and Water Samples
- FO 14 Field Data Management
- FO 15 Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- FO 16 Field Radiological Measurements
- FO 18 Environmental Sample Radioactivity Content Screening
- FO 23 Management of Soil and Sediment Investigative Derived Materials (IDM)
- FO 25 Shipment of Radioactive Materials Samples
- Volume II Groundwater
 - GW 1 Water Level Measurements in Wells and Piezometers
 - GW 2 Well Development
 - GW 4 Slug Tests
 - GW 5 Measurement of Groundwater Field Parameters
 - GW 6 Groundwater Sampling
- Volume III Geotechnical
 - GT 1 Logging Alluvial and Bedrock Material
 - GT 2 Drilling and Sampling Using Hollow-Stem Auger Techniques
 - GT 3 Isolating Bedrock from the Alluvium with Grouted Surface Casing
 - GT 4 Rotary Drilling and Rock Coring
 - GT 5 Plugging and Abandonment of Boreholes
 - GT 6 Monitoring Wells and Piezometer Installation
 - GT 8 Surface Soil Sampling
 - GT 10 Borehole Clearing
 - GT 17 Land Surveying

Procedures from the Environmental Management Radiological Guidelines (EMRG) Manual (No 3-21000-OPS-EMRG) (EG&G 1991c) will also be used during the OU 7 field investigation

- 1 1 Gamma Radiation Surveys
- 2 1 Personnel Contamination Monitoring
- 3 02 Survey Requirements for Conditional and Unrestricted Use
- 3 1 Performance of Surface Contamination Surveys
- 6 1 Performance Tests and Operational Checks for Ludlum 12-1A and Model 31 Survey Instruments
- 6 3 Performance Checking and Operation of the Eberline SAC-4 Alpha-Scintillation Smear Counting Instrumentation
- 6 6 Use of the Bicorn FIDLER (Fielder Instrument for the Detection of Low-Energy Radiation)

3 2 2 *Clarifications to the Sampling and Analysis Plan*

Phase II field investigation activities described in the sampling and analysis plan (DOE 1994) are clarified in this section. Procedures for disposal of investigative derived wastes and requirements for air monitoring are also discussed. Document change notices and document modification requests for SOPs that are relevant to Phase II activities are presented.

3 2 2 1 Monitoring Wells and Well Drawdown Tests

Monitoring wells will be installed to evaluate the nature and extent of groundwater contamination in the UHSU near the East Landfill Pond. Wells will also be installed in No Name Gulch to assess the presence or absence of contamination in the UHSU and LHSU downgradient of the Present Landfill.

Drawdown recovery tests will be performed in all wells following well development and initial sampling. The resulting information will provide hydraulic conductivity data for

the valley-fill alluvium, weathered bedrock, and bedrock around the East Landfill Pond and in No Name Gulch. These data will be useful in studies of contaminant transport.

3.2.2.2 Investigative Derived Wastes

All investigative derived wastes generated must be drummed and disposed in accordance with SOPs FO 7, FO 8, FO 9, FO 10, and FO 23.

3.2.2.3 Air Monitoring Requirements

Sampling activities within IHSS 114 will take place concurrently with ongoing landfill operations. Although appropriate procedures for the prevention of contaminant dispersion are used by the landfill operators, air monitoring will be required during sample collection activities to evaluate the effects of landfill operations on data quality. Air monitoring during sample collection activities will ensure that the samples collected are representative of environmental media. Onsite air monitoring will also ensure that field activities comply with the Interim Plan for the Prevention of Contaminant Dispersion (IPPCD) (EG&G 1991).

3.2.2.4 Document Change Notices and Document Modification Requests for SOPs

In order to maximize efficiency and minimize contaminant dispersion within IHSS 114 resulting from drilling, monitoring well installation, and decontamination activities, some new procedures were developed during Phase I field activities at OU 7 and were incorporated into the SOPs as document change notices (DCNs). These changes are now referred to as document modification requests (DMRs). DCNs or DMRs relevant to Phase II activities pertain to the following SOPs:

- GT 3 Isolating Bedrock from the Alluvium with Grouted Surface Casing
 - Specify use of 8-inch PVC surface casing for boreholes
 - Specify depth that surface casing is set into bedrock
- GT 6 Monitoring Wells and Piezometer Installation
 - Specify decontamination procedures for heavy equipment
- GW 4 Slug Tests
 - Specify procedures for a bail-down test

3.2.3 *Field Documentation*

Extensive documentation is required by EG&G during field investigations at Rocky Flats. All personnel are responsible for initiating and completing in a timely manner the field documentation listed in Table 3-3, QA Field Forms for Rocky Flats. Completed forms will be checked for accuracy and completeness. All SOP forms and logbooks from the Phase II RFI/RI at OU 7 will be transmitted to the EG&G Records Center within 30 days of fieldwork completion.

3.2.4 *Coordination with Other Activities*

The Stoller project manager, site supervisor, and site safety officer will coordinate field activities with the EG&G Waste Operations Landfill Supervisors (Jim Wesorick and George Gallegos). The landfill normally operates on Mondays, Wednesdays, and Fridays, and waste operations will be taking place at the same time as the field investigation within IHSS 114. The Stoller site manager will maintain contact with EG&G Waste Operations as required to inform them of planned field activities. The site manager will also relate the locations of field activities to ensure that stakes and/or flagging used to identify sampling locations and permanent sampling points (such as wells) are not moved or damaged during ongoing landfill operations.

3.3 **Data Evaluation**

Data evaluation will be completed as described in the technical proposal for OU 7 to meet the objectives of the work plan technical memorandum (DOE 1994). The Stoller database managers will coordinate with RFEDs personnel to acquire the appropriate validated data for use in data evaluation and preparation of the baseline risk assessment and the IM/IRA decision document. The schedule for data evaluation is presented in Section 5 of this plan.

Table 3-3
Quality Assurance Field Forms for Operable Unit No. 7

[illegible]

(r) = will be used to supplement RFEDS
(d) = will be used to supplement Drum Tracking
* = driller

Table 3-3
Quality Assurance Field Forms for Operable Unit No. 7

	General/Borehole/Well Sample Package															Health & Safety Package																
	Record of Drilling Fluids and Cuttings (FO 8C)	Borehole Clearing Form (GT 10A)	Daily Field Drilling Activities Report (GT 2A REV 3)	G W Monitoring Well & Piezometer Report (GT 6A)	Well/Borehole Abandonment Form (GT 5A)	Borehole Log Form (GT 1A)	Preliminary Well-Site Field Log (GT 1B)	Equipment Decon/Wash Checklist (FO 3A)	Heavy Equipment Decon/Wash Checklist (FO 4A)	Results of Radiological Measurements in the Field (FO 16A & FO 16B)	RFEDS - Field Data Transmittal (FO 14A)	RFEDS - Well Installation (FO 14G)	RFEDS - Subsurface Soil Sampling (FO 14E)	COC Forms	Logbook Copies	Core Inventory	Work - Excavation Permit	Buffer Zone Access List	Personnel Decon Record H&S Form (1 2)	Calibration Record (FO 15A)	Weight Loss Form	Health & Safety Checklist	Health & Safety Audits	Results of Radiological Measurements in the Field (FO 16A & FO 16B)	Contamination Survey Forms (OPS 1 1A, 1 1B, 3 1A, 6 6A, as appropriate)	Verification of Organic Vapor Monitoring Results (FO 8B)	Field Monitoring Results of Cuttings or Core (FO 8A)	Record of Drilling Fluids and Cuttings (FO 8C)	Daily Source Check Log (OPS 6 1A, 6 1B, 6 1C as appropriate)	Performance Test Log Sheet (OPS 6 3A, 6 3B, 6 3C, 6 4A, 6 4B as appropriate)		
EG&G											Check	Check	Check					X														
Project Manager																																
Site Manager		X																														
Site Safety Officer																																
Health & Safety Specialist	X								Finish	X	Finish		Finish	Finish						X	X	X	X	X	X	X	X	X	X	X	X	
Sample Manager									Check												X	X	X	X	X	X	X	X	X	X	X	
Assistant Site Manager									X						X																	
Rig Geologist			X (r)	X (r)	X	Start X (r)	X	X	Start X*		Start	X	Start X	Start X (r,d)																		
Field Database Manager											Input	Input	Input																			
Core Logger						Finish X (r)											X															
Groundwater Crew Leader																																
Soil Sample Crew Leader																																
Data Packages																																

(r) = will be used to supplement RFEDS

(d) = will be used to supplement Drum Tracking

* = driller

3.4 Baseline Risk Assessment

In order to determine whether or not remediation of East Landfill Pond sediments and adjacent soils is required, it is necessary to determine if concentrations of contaminants present risks to human health or the environment. Data from Phase II soil samples will support the risk assessment. The risk assessment approach will be developed and recorded in a series of technical memoranda. Stoller will coordinate with EG&G risk assessment personnel to refine the risk assessment process as necessary. Gradient will provide peer review and technical support for the risk assessment. The baseline risk assessment will support the environmental assessment for the IM/IRA decision document. The schedule for the baseline risk assessment is presented in Section 5 of this plan.

3.5 IM/IRA Decision Documents

Results from numerical and/or analytical modeling, conceptual design, data evaluation, and the options analysis will be used to prepare IM/IRA decision documents for collection of landfill leachate and for landfill closure. Stoller will develop the documents in accordance with guidance for implementing interim actions and CHWA closure requirements. TerraMatrix will do the conceptual design work and will prepare the final Title II designs. The schedule for development of the IM/IRA decision documents and the final Title II designs is presented in Section 5 of this plan.

4. EQUIPMENT

The following items necessary for commencing fieldwork will be supplied by EG&G

- Field trailer with tie downs and stairs
- Office furniture for trailer
- Telephone
- Conex storage trailer and lock
- Portable toilet
- Access to a photocopier and fax machine
- Drums for investigative derived wastes
- Radios for field crews
- Main decontamination facility (primarily for heavy equipment)
- Camera equipment for core photographs (tripod, lights, camera pass)
- Photograph processing/development
- Binocular microscope
- Core logging equipment (sieves, hot plate, graduated cylinders, etc)
- Hermit datalogger
- Transducer cables
- Datacap software (and updates/upgrades)
- DOE cotton coveralls
- Sample containers for all sampling activities
- Laboratory analyses

The following equipment will be rented for OU 7

- Field trucks (4)
- Health and safety monitoring equipment

The following equipment will be supplied by Stoller

- Camper shells
- Field clothing
- Personal protective equipment
- Drum liners
- Sampling equipment
- Coolers
- Blue Ice
- Water level meter
- Computer and printer
- LOGGER software
- dBASE IV software
- Office supplies

- Corrosive storage cabinet
- Drinking water/dispenser
- Decontamination water

The following capital equipment will be procured by Stoller for EG&G

- Refrigerator
- Freezer
- Drilling and well installation equipment
- Geopump peristaltic pump
- HACH DREL/2000 (with pH meter, case, digital titrator)
- HACH Conductivity/TDS meter
- HACH DR2000 Spectrophotometer

The following expendable equipment will be procured by Stoller for EG&G

- HCl acid
- Nitric acid
- Gas for field trucks
- Shipping costs

5. SCHEDULE

A project schedule for RFI/RI and IM/IRA activities is presented in Figure 5-1. A schedule for the implementation of field activities is shown in Figure 5-2. Details regarding implementation of these activities are discussed below.

5.1 Implementation of the OU 7 Sampling and Analysis Plan

The field investigation will begin after EG&G has approved the health and safety plan addendum (EG&G 1994), anticipated on or around July 18, 1994. Field implementation is scheduled to continue through the summer to approximately October 27, 1994. Demobilization activities will begin in late October and may continue into November. Delays to the scheduled field activities are expected as a result of occasional poor weather conditions. In the event that weather delays or temporary cancellations of fieldwork occur more frequently than anticipated, the remaining schedule may require modification (i.e., weekend work or other appropriate measures) to reflect those delays.

5.1.1 Field Reconnaissance

Prior to initiating fieldwork, a visual survey will be performed to (1) identify any potential hazards that would prohibit or limit the use and/or access of the field equipment, (2) evaluate potential impacts of ongoing waste operations on the proposed field activities and quality of data collected, and (3) evaluate access to drilling locations along No Name Gulch. Locations of all boreholes will be paced and/or taped off prior to sampling or drilling. Locations of surface soil samples will be surveyed using coordinates from the Phase I RFI/RI to ensure that the verification samples are collected from the same location as the original sample. The visual inspection will be conducted over two days beginning approximately August 4, 1994.

5.1.2 Radiation Survey

A radiation survey will be performed over the surface of areas within IHSS 114 and No Name Gulch that will be the site of drilling and soil sampling activities. The survey will be conducted using a side-shielded field instrument for detection of low-energy radiation (FIDLER). The radiation survey will commence following completion of the visual inspection and take approximately five working days to complete.

Figure 5-1 OU 7 RFI/RI and IM/IRA Project Schedule
Fiscal Year 1994 – Fiscal Year 1996

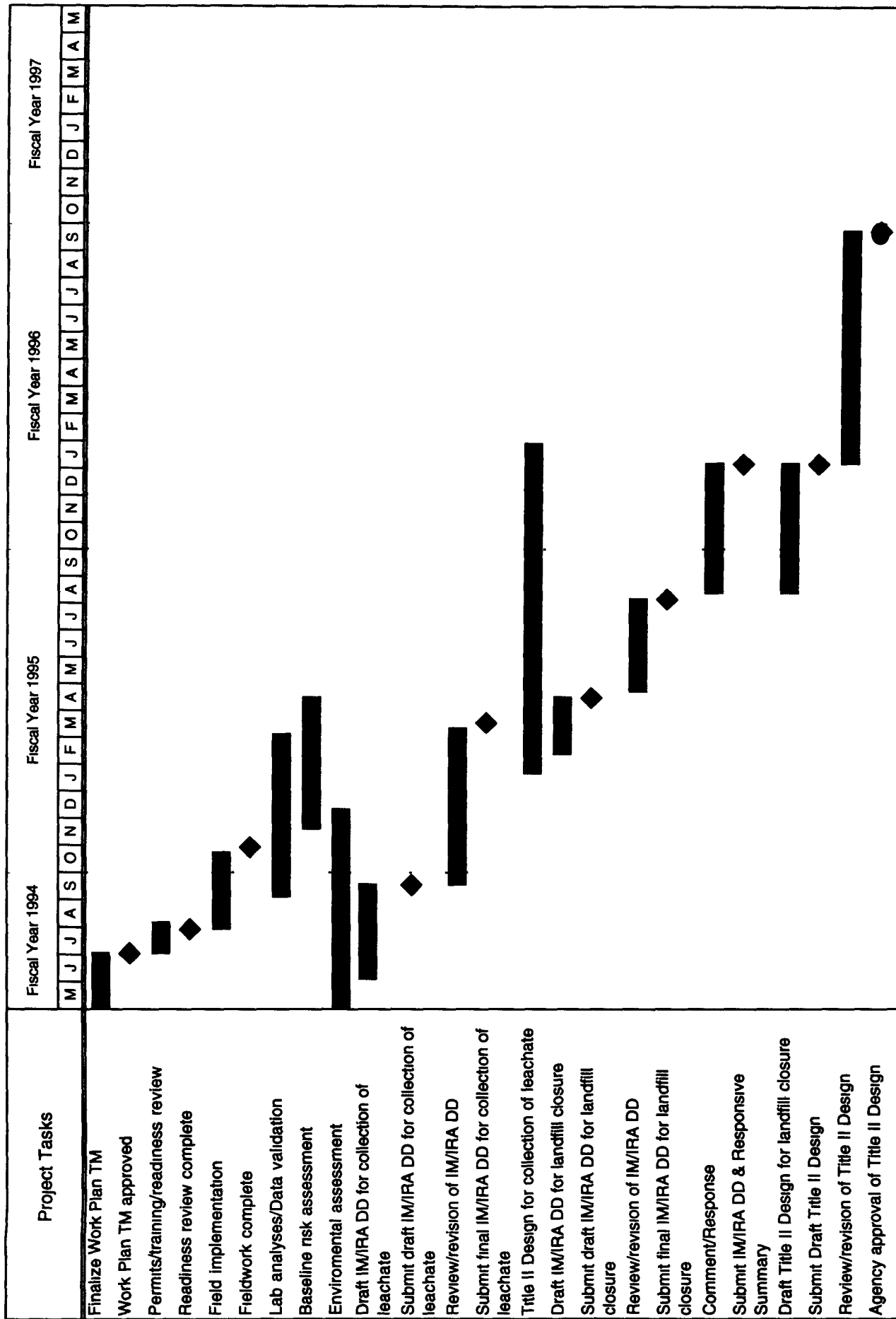
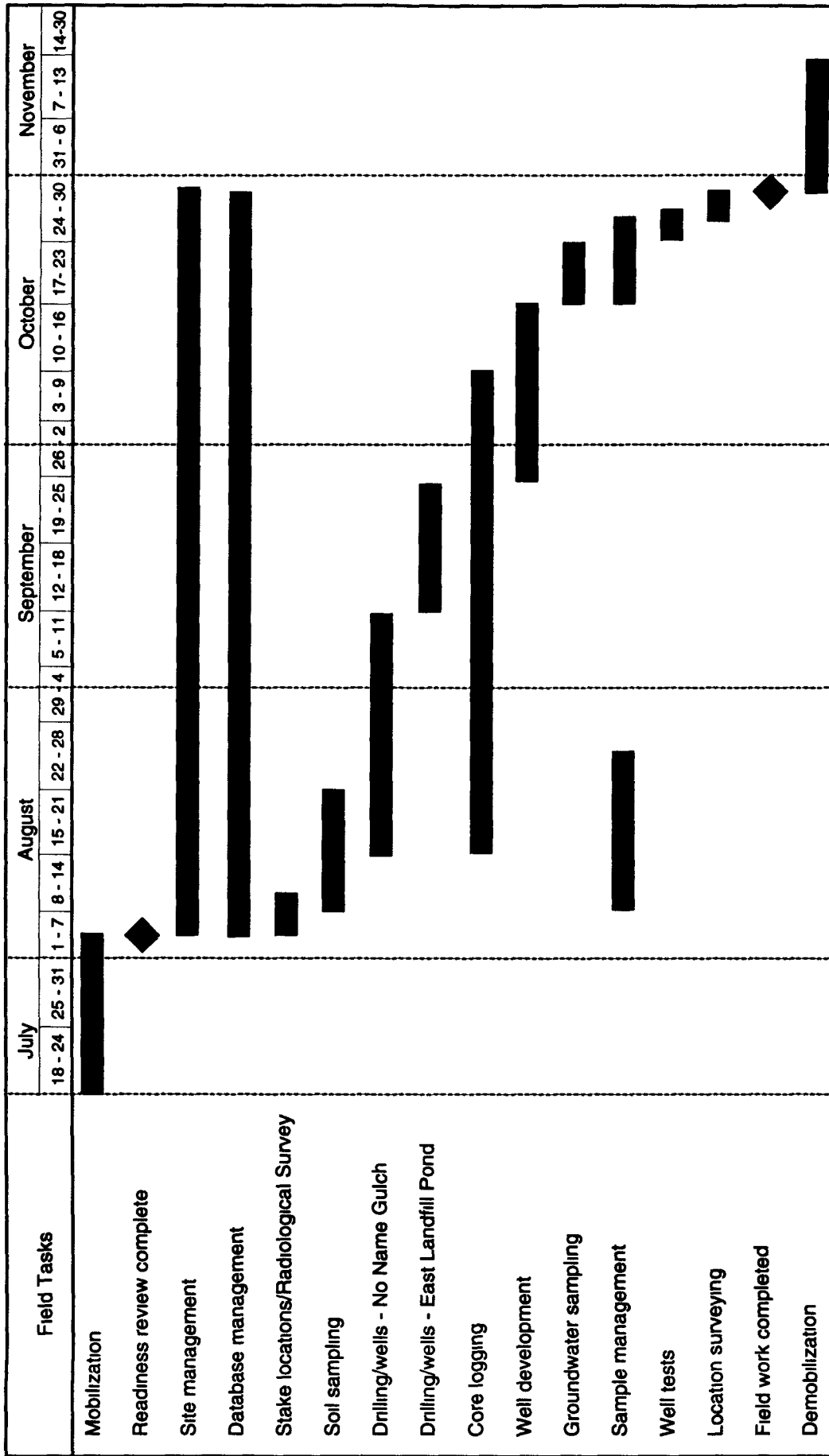


Figure 5-2 OU 7 Field Implementation Schedule
July 1994– November 1994



MESFIELD TASK U5-15-04

5 1 3 *Borehole Drilling*

Boreholes will be drilled at two locations downgradient (east) of the East Landfill Pond within No Name Gulch, and two locations adjacent to the East Landfill Pond. Boreholes drilled in No Name Gulch will penetrate the soils, valley-fill alluvium, weathered bedrock, and bedrock (if applicable) to a depth of approximately 40 to 50 feet. A number of exploratory boreholes will be drilled to select the optimum location of the wells (those with the thickest saturated material) to be installed in No Name Gulch. Boreholes adjacent to the East Landfill Pond will be drilled in colluvium and weathered bedrock to a depth of 15 to 20 feet. Data obtained from these boreholes will be used to design monitoring wells installed at these locations.

The drilling contractor will be mobilized to begin work on approximately August 15, 1994. Drilling activities will be sequenced to provide efficient use of drilling equipment and to meet other scheduling requirements for monitoring well installation and groundwater sampling. The drill rig will start at the two locations within No Name Gulch. Boreholes located adjacent to the East Landfill Pond will be drilled next.

5 1 4 *Monitoring Well Installation*

Groundwater monitoring wells will be installed in four boreholes within No Name Gulch, and in two boreholes adjacent to the East Landfill Pond. Wells in No Name Gulch will be constructed to obtain water-level measurements and groundwater samples for evaluating the nature and extent of contamination in the valley-fill alluvium, weathered bedrock, and bedrock downgradient of the Present Landfill. Wells adjacent to the East Landfill Pond will be constructed to obtain water-level measurements and groundwater samples for evaluating the nature and extent of contamination in the colluvium and weathered bedrock downgradient of the landfill. Wells will be designed using information from the borehole logs. Installation and development of monitoring wells will be concurrent with borehole drilling. Installation will be completed by approximately October 16, 1994.

5 1 5 *Groundwater Sampling*

One round of sampling will be initiated at least 48 hours after the last monitoring well has been developed. The four monitoring wells in No Name Gulch will be installed and developed first. These wells will also be sampled earliest so that an assessment of the

nature and extent of contamination in UHSU and LHSU groundwater in No Name Gulch can begin. Groundwater samples will be collected monthly for four months. The first round of sampling will be performed by the OU 7 field team from approximately October 17, 1994 through October 23, 1994. The following three rounds of sampling will be performed under the sitewide monitoring program.

5.1.6 Drawdown Recovery Tests

Well drawdown recovery tests will be conducted in all wells following well development and initial sampling. These tests will provide hydraulic conductivity data for the valley-fill alluvium, weathered bedrock, and bedrock in No Name Gulch and colluvium and weathered bedrock adjacent to the East Landfill Pond that will be useful in studies of contaminant migration. Well tests will be performed from approximately October 23, 1994 through October 27, 1994.

5.1.7 Soil Sampling

Surface soil samples will be collected at spray evaporation areas adjacent to the East Landfill Pond to verify analyte concentrations and to determine the spatial distribution of contamination around the original sample location where analyte concentrations exceeded preliminary remediation goals. Samples will be collected from the 0- to 2-inch horizon to verify analyte concentrations at 34 locations (34 samples) and to determine the spatial distribution of contamination at 10 locations. Four samples will be collected per location (39 samples — two of the locations are adjacent to each other so only one sample will be collected). Samples will be collected from the 0-to 10-inch horizon to verify analyte concentrations at 10 locations (10 samples) and to determine the spatial distribution of contaminants at 2 locations. Four samples will be collected per location (8 samples).

Samples of the interim soil cover material at the Present Landfill will be collected to determine the physical properties of the material. One soil sample will be collected per acre (27 samples). Soil sampling locations will be the same as those on the Phase I sampling grid. Sample locations will be surveyed and staked during the first week of August. Soil samples will be collected from August 8, 1994 through August 21, 1994.

5.1.8 Location Survey

After sampling, drilling, or well installation, the locations will be surveyed using standard land surveying techniques. The minimum horizontal and vertical accuracy will be ± 0.1 foot. Monitoring wells may be located to the 0.01 feet in elevation to correspond with water-level measurements. Three elevations will be determined for each well: top of concrete well pad, top of well casing, and top of surface casing. Surveying will be performed during the last week of October after groundwater sampling and well testing have been completed.

5.2 Data Evaluation

Data evaluation activities will begin as soon as data from the field investigation are available. Validated analytical data will be acquired from RFEDS by March 1995. These data will be used to support the baseline risk assessment and the IM/IRA tasks. Much of the historical and Phase I RFI/RI data have already been evaluated as part of the RI process.

5.3 Baseline Risk Assessment

Data evaluation and preparation of technical memoranda for the baseline risk assessment is scheduled from November 1994 through April 1995. Technical memoranda will undergo at least three review and revision cycles. Deliverable dates for the technical memoranda have not been established.

5.4 IM/IRA Decision Documents

A separate IM/IRA decision document for collection of landfill leachate will be prepared. Work on the options analysis, conceptual design, data evaluation, and modeling will begin in June 1994. The draft IM/IRA decision document for collection of landfill leachate will be submitted on September 22, 1994. The document will undergo one DOE/EG&G review and two CDH/EPA reviews. Responsiveness summaries will be submitted to address comments on the document. The final IM/IRA decision document for collection of landfill leachate will be approved by March 22, 1995. The final Title II design will be approved by the agencies on February 2, 1996.

Work on the options analysis, conceptual design, data evaluation, and numerical and/or analytical modeling tasks for landfill closure will begin in approximately November 1994 and be completed by March 1995. Preparation of the draft IM/IRA decision document will begin in February 1995 and be completed by April 1995. The draft IM/IRA decision document for landfill closure will undergo one DOE/EG&G review and two CDH/EPA reviews. Responsiveness summaries will be submitted to address comments on the document. The final IM/IRA decision document for landfill closure will be approved by January 2, 1996. Work on the Title II design will begin in August 1995. Three review cycles will be required after the design is submitted to DOE/EG&G. The final Title II design will be approved by the agencies on approximately September 27, 1996.

6. REFERENCES

- DOE 1991a Federal Facility Agreement and Consent Order (Interagency Agreement [IAG] U S DOE, U S EPA, and CDH) U S Department of Energy, Washington, DC January 22
- DOE 1991b Final Phase I RFI/RI Work Plan - Operable Unit No 7 EG&G Rocky Flats, Inc , Golden, CO December
- DOE 1994 Technical Memorandum, Revised Work Plan, Operable Unit No 7 - Present Landfill (IHSS 114) and Inactive Hazardous Waste Storage Area (IHSS 203) U S. Department of Energy, Rocky Flats Site, Golden, Colorado Draft Report April 15
- EG&G 1991a Rocky Flats Plant Site-Wide Quality Assurance Project Plan for CERCLA Remedial Investigations/Feasibility Studies and RCRA Facility Investigations/Corrective Measures Studies EG&G Rocky Flats, Inc , Golden, CO May
- EG&G 1991b Interim Plan for the Prevention of Contaminant Dispersion (IPDCD), Rocky Flats Plant Site EG&G Rocky Flats, Inc , Golden, CO
- EG&G 1991c Environment Management Radiological Guidelines EG&G Rocky Flats, Inc Golden, CO December
- EG&G 1992 Environmental Management Department Standard Operating Procedures Volumes I - VII EG&G Rocky Flats, Inc , Golden, CO March
- EG&G 1994 Addendum to Site-Specific Health and Safety Plan Implementation of Phase II RFI/RI, Rocky Flats Plant, Operable Unit No 7 Draft Report April 25
- Walsh 1992 Site-Specific Health and Safety Plan, Implementation of Phase I RFI/RI Work Plan Rocky Flats Plant, Operable Unit No 7 Walsh & Associates, Inc October 26

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